



# **A STUDY OF PROJECT SUCCESS AND PROCUREMENT FRAMEWORKS IN INDIAN CONSTRUCTION INDUSTRY**

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## **ABSTRACT**

*The conventional procurement framework has been in presence since the development of the building construction. Since its rise, it has worked up to mark. Be that as it may, as of late, expansive and complex ventures have demonstrated hard to oversee. The investigation of procurement frameworks and project achievement is aimed for enhancing the viability of project procurement. Besides, almost no research has been led to decide the relationship of procurement and project success or disappointment in India. This exploration fills this hole as appropriation of its discoveries can enhance extend success in the Indian construction industry. The point of this research was to explore the impact of a procurement framework on the success of construction tasks. From the literature review and the investigation of the study comes about, four noteworthy discoveries were made as takes after. Firstly, the customary procurement framework is still the best known and connected framework in the Indian construction industry regardless of its various confinements. Secondly, the real issue with the customary procurement framework was the nonattendance of contribution from contractors. Thirdly, the primary reason referred to by most respondents for not utilizing the alternative procurement frameworks was absence of information. Fourthly, a building procurement framework has an impact on project's prosperity and in conclusion the coordinated procurement frameworks in India have not been broadly utilized and comprehended and consequently its utilization may not be effective. In light of these outcomes, it was prescribed that there ought to be a*

*formal training on the accessibility of option procurement frameworks for use by partners in the Indian Construction industry. Likewise, workshops ought to be sorted out where specialists from nations, for example, Australia, United Kingdom, The United States of America would impart their encounters to their Indian partners.*

**Key words:** Project Success, Procurement, Procurement Frameworks, Procurement Systems, Construction Management.

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## 1. INTRODUCTION

As a creating nation, India confronts various financial difficulties. These incorporate, deficient lodging stock, unemployment, absence of infrastructure, clear differences between poor people and the rich. These difficulties negatively affect the Indian construction industry. For the most part, the conventional framework has not satisfied desire worldwide and the Indian construction industry is no special case. This is because of expanding construction, extend size and multifaceted nature, absence of combination of the design and construction stages long general venture program and cost invades.

## 2. LITERATURE REVIEW

Kerzner (2001) characterized a project as any arrangement of exercises and undertakings that have a particular target to be finished inside specific details, have financing confinements and expend assets(i.e. cash, individuals, equipment). The procedure of construction (from commencement, outline, production and last handover to the client) fits Kerzner's meaning of a project. Client require the construction of different facilities, (for example, structures, dams, streets) for various reasons. What is normal to all client, notwithstanding, is that they require their activities to be finished inside determined time, budget and particular quality guidelines all together for the finished project to be satisfactory or fit for use by the client or proposed end client. The majority of this should be accomplished with restricted assets, time, cost and quality or execution is the requirements on the project (Kerzner, 2001).

Lim and Mohamed (1999) see extend accomplishment by the utilization of small scale and full scale criteria. Their small scale criteria incorporate time, cost, quality, execution and security, and their full scale criteria incorporate miniaturized scale criteria in addition to the venture item's real advantage in the operation stage. Shenhar et al. (1995) found the four criteria of project success to be specific: effectiveness, client's advantage, organizational achievement and failure potential to organization. From the prior, project success implies different things to various individuals. Be that as it may, as per the PMBOK Guide distributed by the Project Management Institute (PMI, 2004), extend success criteria incorporate the brilliant triangle and the key project partners' fulfillment of the project.

### 2.1. Procurement Frameworks

As indicated by Kwakye (1997), likewise, the procurement technique received will rely on upon: Complexity and size of the venture, expectation of particular execution necessities, necessity for rivalry on cost and to time, necessity for responsibility with respect to those worried in its organization and pre-duties and existing relationship. Mastermann (1996) arranges extend procurement frameworks into a few classifications in view of the relationship

and basic cooperation amongst plan and construction obligations: 1. Isolated (Traditional procurement frameworks) 2. Administration arranged procurement frameworks (in this way, development administration, administration contracting and design and manage. 3. Integrated procurement frameworks. 4. Optional procurement frameworks (consequently, cooperating and union). Procurement ways can likewise be delegated as design and build way, traditional way and management contract way.

## 2.2. Type of Procurement Framework

**Traditional Framework:** According to Kwakye (1997), as far as timing and obligation under this framework, design is isolated from construction and each phase of the production procedure oversaw independently. This procurement technique might be described as a successive approach: construction, development and implementation stages are each finished and endorsed before continuing to the next. The client connects with a designer to set up the plan of the total facility, including construction drawings, determinations and contract. Under the conventional framework, the client contracts specifically and independently with the designer and contractor(s).

**Integrated Framework:** Kwakye (1997), states that, the coordinated framework is a nonexclusive terms for some frameworks which try to cover design and production of emergence procedures. The client selects the designing group for the project and additionally a different element (consultant or contractor) to concentrate on the administration of the construction procedure as an end-result of a specific fees. Works or Trade contractors are named to attempt construction work and are chosen by arrangement or through competitive pricing. The arrangement of such a substance is made amid the arrangement of whatever is left of the outline group; along these lines, this administration approach permits the contractors to have a contribution to the plan stage without irritating the guideline of separated obligation.

**Construction Management:** Construction Management is one of the administration arranged procurement frameworks for conveying project on time.

**Management Contracting:** Management Contracting is a procurement framework in which the client delegates and association or an organization named "management contractor" to oversee and co-ordinate the plan and creation periods of the project. This Management Contractor joins the plan group at the pre-construction stage to guarantee building capacity of the project.

**Design and Construct:** Design and build offers the client a setting to deal with a construction extend with a solitary purpose of contact, where a solitary contractor is in charge of both plan and development (Chan et al. 2002). In this technique, the project idea is produced by the client with the help of a design advisor, for which recommendations are called (Kelley 2012). At that point a design and construction contractor is chosen from the recommendations. Preferences of this technique are supporting imaginative arrangements, being practical, joining the skill of the design and construction experts, and decreasing regulatory work of the client.

## 2.3. Project Success

**Client's criteria for project success:** This school of thought accept that an successful project is the one which is finished on calendar, inside spending budget, meets practical necessities and least disturbance in producing a building.

**Consultant's criteria for project success:** The consultant's criteria of project achievement include: fulfilled client, quality architectural item, met configuration fee and benefit objective; proficient staff satisfaction, met extend spending budget and calendar; attractive

product, less construction issues, socially acknowledged and all around characterized extent of work.

Contractor's criteria for project success: From the contractor's point of view, a fruitful project is the one that meets plan (preconstruction, development, design); benefit; under spending budgets (funds acquired for proprietor as well as contractors); quality particular met or surpassed; no cases (proprietors, subcontractors); security, client fulfillment (individual relationship); great subcontractor purchase out, great direct correspondence; and insignificant or no surprise amid the project.

### **3. OBJECTIVE OF STUDY**

The point of this research is to examine the impact of a procurement framework on the success of construction tasks. Keeping in mind the end goal to accomplish the above expressed research, the following objective are articulated: (a) To distinguish the degree to which the present procurement frameworks (Traditional and Integrated) are opted in India; (b) To distinguish elements that add to the success of a project extend and the significance connected to the components by clients, consultants and contractors; (c) To set up a linkage between procurement frameworks and the project success; and (d) To distinguish the factors that impact the accomplishment of construction project usage. The consequences of this examination could embraced to: (1) Promote other procurement frameworks other than the conventional framework in the fulfillment of desired objectives; and (2) Educate those occupied with mind boggling and expansive undertakings on the utilization of other procurement frameworks for the accomplishment of project success.

### **4. RESEARCH METHODOLOGY**

Accomplishing the target of this research requires adjusting to intelligent and logical procedures and observational examinations from the perspective of client, consultants and contractors. Data for this review was accumulated as takes after: Firstly, utilization of books, specialized diaries and expert magazines and besides, through polls to client, consultants and contractors. Reactions to the poll were gathered, grouped and broke down. The examination included positioning the distinctive elements connecting procurement frameworks and project success as per the relative significance lists for client, consultants and contractors.

#### **4.1. Questionnaires Development**

Polls were utilized as information aggregate devices in this research because of the number of respondents included. In this manner, the polls were intended to address the review concerns. It was critical to first build up the data to be accumulated so that significant inquiries are requested (Nachimias and Nachimias, 1996). Once the study surveys were drafted, they were pretested by trying it out on small number of respondents.

#### **4.2. Content of Questionnaires**

Having recognized the respondents for the polls and their attributes, the following stride was centered around the design of the real issues that were approached to request the essential data for the review. The way in which survey inquiries were introduced would influence the nature of the reactions and in this way guarantee the correct inquiries were asked, surely knew and asked in the correct way (Wahab, 1996). The polls comprised of twenty-seven inquiries principally; closed ended and scaled-response sort and the inquiries are typed on standard A4 sheets with front and back cover pages. The survey comprised of close finished inquiries. With the end goal of the review, the inquiries were assembled under three classes. The main arrangement of inquiries identified with the respondent's profile: this was expected

to discover the experience of respondents. The second gathering of inquiries looked to discover the relationship between client objectives, project success and building procurement frameworks. The third section, looked to the linkage between construction procurement frameworks and venture achievement. In outlining the surveys, the analyst used a portion of the inquiries in progress already reviewed, all the more particularly by Obeng-Ayirebi (2002) and Songer et al (1997).

### 4.3. Statistical Tool

Based on the information provided by the Contractors, Consultants and District Assemblies, the relative importance indices of the respondents were computed to deduce their rankings as below. The data was analyzed by ranking the various factors that affected project success of construction projects. The ratings of identified factors made by respondents against the five-point scale were combined and converted to deduce the Relative importance indices of the various factors as follows:

$$RAX = \Sigma r / (A \times N)$$

Where  $\Sigma r$  is summation of the weightings given to each factor, A is the highest rating and N is the total number of respondents for that factor.

## 5. RESULT

Data received from all respondents i.e. client, consultant and contractor in the form of questionnaire response when applied to above equation following result is obtained.

**Table 1** Factors considered in choosing a particular procurement framework

Factors	Rating					Weighting	Rax	Rank
	1	2	3	4	5			
Project's objective	15	13	22	4	1	128.000	0.465	2
Cost optimization	15	12	23	4	1	129.000	0.478	1
Source of Funding	25	11	9	9	1	115.000	0.426	7
Quality level	14	26	7	7	1	120.000	0.444	4
Time savings	15	26	6	7	1	118.000	0.437	5
Ease of use	25	10	10	9	1	116.000	0.430	6
Complexity of Project	14	25	7	8	1	122.000	0.452	3
Dispute avoidance	26	9	11	8	1	114.000	0.422	8
Experience	26	11	9	9	0	111.000	0.411	9
Risk avoidance	28	11	9	8	0	109.000	0.403	10

**Table 2** Consultant's Level of Knowledge of Procurement Systems

Level of knowledge of procurement system	Rating					Weighting	RAX	Rank
	1	2	3	4	5			
Traditional	6	5	10	15	18	196.000	0.726	1
Management contracting	5	10	10	13	15	182.000	0.687	4
Construction management	5	6	17	12	15	191.000	0.695	3
Design and build	6	8	9	17	15	192.000	0.698	2

**Table 3** Contractors Level of Knowledge of Procurement Systems

Level of knowledge of procurement systems	Rating					Weighting	RAX	Rank
	1	2	3	4	5			
Traditional	2	2	4	8	9	95.000	0.760	1
Management contracting	3	4	6	6	6	83.000	0.664	5
Construction management	1	4	7	6	7	89.000	0.712	3
Design and build	2	3	5	8	7	90.000	0.720	2

**Table 4** Clients level of knowledge of procurement systems

Level of knowledge Of procurement Systems	Rating					Weighting	RAX	Rank
	1	2	3	4	5			
Traditional	3	2	5	7	9	95.000	0.731	1
Management contracting	2	5	5	6	8	91.000	0.700	4
Construction management	2	3	8	6	7	91.000	0.700	3
Design and build	3	3	4	9	7	92.000	0.708	2

**Table 5** Relationship between building procurement selection and project success (All respondents)

	Yes	No	Relationship	No relationship
Is there a relationship between building procurement selection and project success	78	28	74%	26%

## 6. RESEARCH FINDINGS

In the review, it was built up that there is a relationship between the choice of a procurement framework and the result of a project. As the examination comes about show, a project's general success has an association with it's cost, time and quality. In this manner, as a rule, specialist's assessment criteria are steady with the normally concurred brilliant triangle of time, cost and quality. Among the three components, consultants see time and quality more vital than cost in rating project success. Client assumes the most essential part in deciding project success. Contractor's execution is additionally altogether identified with the time, cost and quality criteria of project success.

## 7. SUMMARY OF FINDINGS

From the literature review and investigation of the review comes about, the discoveries are stated underneath:

a) Although most clients and consultants know about the management and integrated works procurement frameworks, the conventional building procurement framework is still the best known and the most broadly utilized as a part of the Indian construction industry. This is on the grounds that it is comprehended by most client and they know their monetary responsibility on acknowledgment of the prescribed contractor's tender sum. Notwithstanding, the division of the design and construction process tend to encourage a 'them and us' state of mind between the clients and the contractors which lessens the solidarity that is key for the fulfillment of client's development objective.

b) The main three basic achievement elements of any procurement framework are in the accompanying request: Production of a project, project duration and quality of design.

c) Most clients and their project team do consider all building procurement frameworks when beginning another project on the grounds that most respondents additionally trust that there is a relationship between building procurement framework and project success, in any case, the customary framework is chosen generally times.

d) The determination of a suitable building procurement framework adds to the achievement of client's targets as for time, cost and quality for construction project, subsequently, extend success.

e) Integrated procurement frameworks will just work if project members see how to make it function and need to make it work.

## 8. CONCLUSION

In view of the above literature review and the examination of the study comes about it could be presumed that all the exploration targets have been accomplished (under the thought of the exploration techniques embraced and the restrictions of the review) as takes after:

- (i) The decision of a building procurement framework influences project success;
- (ii) Procurement frameworks other than the customary framework can enhance the fulfillment of client targets on building projects;
- (iii) The incorporated procurement frameworks in India have not been broadly utilized and seen subsequently may have failed in its utilization up to this point;
- (iv) The main three basic achievement components of any procurement framework are in the accompanying request: production of a project, project span and quality of design
- (v) The choice of a suitable building procurement framework adds to the fulfillment of client's goals as for time, cost and quality for development activities' henceforth project success.
- (vi) If partners can anticipate likelihood of project success better, they can find a way to stay away from elements that prompt to and distinguish project worth seeking after.
- (vii) Each procurement framework has its own particular element and idiosyncrasy on the cost, time and nature of the project (i.e. the project execution).

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